

**Field Activity Results Summary
LPR River Mile 10.9 Initial Reconnaissance
April 20 and 21, 2015**

This document describes the results of field activities that were performed on April 20 and 21, 2015 at the River Mile 10.9 (RM 10.9) cap area within the Lower Passaic River Study Area. These activities were performed to prepare for the upcoming solid-phase microextraction (SMPE) passive sampling and to provide information to complete the Quality Assurance Project Plan (QAPP).

Results of the Field Program:

The field program had three objectives. Each objective and if it was achieved are presented below.

1. Attempt to install the SPME samplers using two alternative installation techniques.

The field team could not advance the Henry Push Point Sampler through the armor layer or the geotextile fabric. This probe is made of a thin-walled pipe that did not have the strength to be driven. A drive point probe (AMS Soil Vapor Probe with a screened interval) advanced with a slide hammer was required to advance a point through the armor layer and geotextile fabric and into the active layer. It took multiple attempts to advance the sampler and the drive point was slightly damaged (but retained its integrity along with the screened interval) during advancement. The Henry Push Point Sampler fits inside the AMS Soil Vapor Probe and can be used for placement of SPME fibers.

In summary a technique to install the SPME fibers was confirmed and consists of a sacrificial AMS Soil Vapor Probe Drive Point to advance through the armor layer and geotextile fabric and a Henry Push Point Sampler to install the SPME fibers into the drive point. This technique was discussed with the USEPA on-site representative from CDM Smith.

2. Conduct probing to evaluate the thickness of the individual cap layers (habitat, armor, and active).

The field team attempted to penetrate the armor layer with the drive point probe at or near four stations (0602, 0603, 0604, and 0605) during the reconnaissance (south of the utility corridor). Additionally, the sand habitat layer was probed with a rod at or near eight stations (0601 through 0608). The following cap layer thicknesses were observed:

- Sand Habitat Layer: The sand habitat layer (and any sediment deposited on the habitat layer) was probed at or near four of the stations (one to two attempts per station). The thickness of the habitat layer ranged between 3 and 6 inches and averaged about 5 inches.
- Armor Layer: The armor layer was fully penetrated at or near the four stations (one to two attempts per station). The thickness ranged from 6 to 14 inches and averaged about 10 inches (although some locations were in the hard pan areas which have a thinner armor layer).
- Active Layer: The probing method used easily probed into the active layer, but could not distinguish between the active layer and underlying sediment.

In summary the probing method used was able to distinguish the thickness of the habitat layer and the armor layer, but could not distinguish between the active layer and the underlying sediment. A thin layer of new sediment (based on the observation that the surface sediment was soft and finer than the sand used for the habitat layer) was observed at all locations where a probe was advanced.

3. Attempt to access each proposed upcoming sampling location to evaluate if the samplers may be installed in the dry at low tide or if divers will be needed to install the samplers.

Attempts were made to access each proposed sampling location. Due to the higher than anticipated water levels resulting from the approximately 2 inches of rainfall immediately before

and during the field event on April 20, water level conditions were not typical of low tide. The two upstream most locations (0609 and 0610) could not be accessed because of a mixture of accessibility issues from the landside (chain link fence, jagged metal bulkhead, steep embankment) and high water. The remaining locations were relatively accessible at the next low tide on April 21, but the high water prevented access to each location. It is believed that most if not all of these locations will be accessible except possibly the locations closest to the river channel (0604 and 0607). The attached figure shows the ten proposed station locations and how close the field team was able to get to these stations.

In summary, although not confirmed by this reconnaissance, it appears that most, but not all stations, should be accessible by foot during low tide and dry weather (low flow) conditions.

Conclusions:

Based on the results of this field survey, the following conclusions are made concerning the upcoming SPME sampling:

- 1 Because of difficulties with driving the sampler through the armor layer, installing the samplers by hand with direct walking access to the RM 10.9 cap is the preferred method of installing the samplers. It does not appear that divers would be an effective method of installing the samplers.

If the samplers are installed by directly walking on the RM 10.9 cap, some adjustment to the sampling locations will likely be required (i.e., moved towards the shore in the event the station is submerged during low tide, adjustments due to large armor stone present, etc). Additionally, stations 0609 and 0610 may need to be relocated farther downstream to an accessible area of the RM 10.9 cap or a small boat may be needed to access these locations.

- 2 The probing method used did not distinguish between the active layer of the cap and the underlying sediments. The probing method did distinguish between the armor layer and underlying geotextile and the active layer.

The active layer SPME sampler could be installed immediately (e.g., 1 inch) below the armor layer/ geotextile and the underlying sediment SPME sampler could be installed at a depth below the geotextile based on the as-constructed thickness of the active layer plus 3 inches.

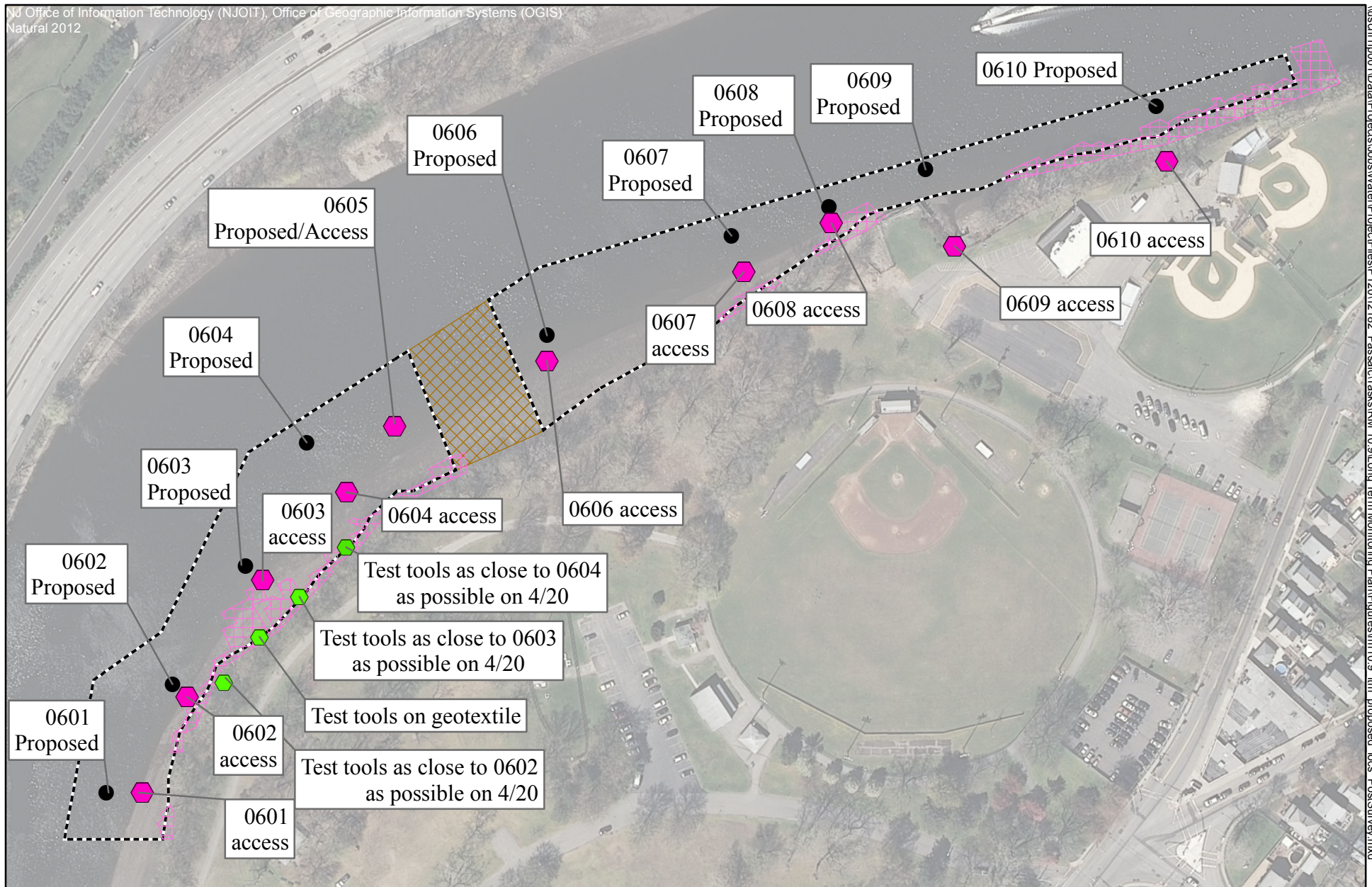


Figure 1
RM 10.9 Site Visit - April 20 and 21, 2015

May, 2015